

AMENDMENTS TO THE CLAIMS

Please amend the claims of this application as follows:

1. (Original) A process for producing a polymer-coated pigment particle, which process comprises:

- (a) reacting the particle with a reagent having a functional group capable of reacting with, and bonding to, the particle, and also having a polymerizable or polymerization-initiating group, thereby causing the functional group to react with the particle surface and attach the polymerizable group thereto; and
- (b) reacting the product of step (a) with at least one monomer or oligomer under conditions effective to cause reaction between the polymerizable or polymerization-initiating group on the particle and the at least one monomer or oligomer, thereby causing the formation of polymer bonded to the particle.

2. (Original) A process according to claim 1 wherein, in step (a) the polymerizable group is bonded to the particle surface via an ionic bond.

3. (Original) A process according to claim 2 wherein the bifunctional reagent used in step (a) comprises a silane coupling group.

4. (Original) A process according to claim 2 wherein the bifunctional reagent used in step (a) comprises a trialkoxysilane coupling group.

5. (Original) A process according to claim 2 wherein step (a) comprises:

- (a1) reacting the particle with a reagent having a first functional group capable of reacting with, and bonding to, the particle and a second functional group capable of reacting to form an ionic bond, thereby causing the first functional group to react with the particle surface and attach the second functional group thereto; and
- (a2) reacting the product of step (a1) with a second reagent having a polymerizable group and a third functional group capable of reacting with the second functional group to form the ionic bond, thereby causing the second and third functional groups to react together to form the ionic bond, and thereby attaching the polymerizable group to the particle surface via this ionic bond.

6. (Original) A process according to claim 5 wherein the second and third functional groups comprise an acidic and a basic group.

7. (Original) A process according to claim 6 wherein the second and third functional groups comprise an ammonium group and a sulfonic acid group.

8. (Original) A process according to claim 1 wherein, in step (a) the polymerizable group is bonded to the particle surface via a covalent bond.

9. (Original) A process according to claim 8 wherein the reagent used in step (a) comprises a silane coupling group and an ethylenically unsaturated group.

10. (Original) A process according to claim 9 wherein the reagent used in step (a) comprises a trialkoxysilane coupling group.

11. (Original) A process according to claim 1 wherein, in step (a) there is attached to the pigment particle a group which provides an initiating site for atom transfer radical polymerization, and in step (b) the product of step (a) is treated with an atom transfer radical polymerizable monomer to form the polymer.

12. (Original) A process according to claim 11 wherein the initiating site comprises a benzylic halogen atom.

13. (Original) A process according to claim 11 wherein step (b) is carried out by treating the product of step (a) with a first atom transfer radical polymerizable monomer under conditions effective to cause polymerization of this monomer on to the particle, stopping this first polymerization, and thereafter treating the particle with a second atom transfer radical polymerizable monomer under conditions effective to cause polymerization of this monomer on to the particle, thereby forming a block copolymer of the two monomers on the particle.

14. (Original) A process according to claim 1 wherein, in step (a) a polymerizable group is attached to the particle, and in step (b) the product of step (a) is contacted with at least one monomer or oligomer under conditions effective to cause polymerization of the monomer or oligomer with the polymerizable group on the polymer, thereby causing formation of the polymer on the particle.

15. (Original) A process according to claim 14 wherein the at least one monomer or oligomer used in step (b) comprises at least one monomer or oligomer having a chain of at least about four carbon atoms attached to a polymerizable group, where by the polymer formed on the particles comprises a main chain and a plurality of side chains extending from the main chain, each of the side chains comprising at least about four carbon atoms.

16. (Original) A process according to claim 14 wherein the at least one monomer or oligomer used in step (b) comprises at least one monomer or oligomer comprising a group capable of initiating polymerization but which essentially does not initiate such polymerization under the conditions used in step (b), and following step (b) the polymer-bearing particle is contacted with at least one monomer or oligomer under conditions which cause the group capable of initiating polymerization to initiate polymerization of the at least one monomer or oligomer, thereby causing the formation of a branched-chain polymer on the particle.

17. (Original) A process according to claim 16 wherein the group capable of initiating polymerization is a group capable of initiating atom transfer radical polymerization.

18. (Original) A process according to claim 16 wherein the group capable of initiating polymerization is a group capable of initiating stable free radical polymerization.

19. (Original) A process according to claim 1 further comprising depositing at least one of silica and alumina on the pigment particle prior to step (a).

20. (Original) A process according to claim 19 wherein silica is deposited on the particle prior to step (a), the deposition being effected such that substantially the entire surface of the pigment particle is covered by the silica.

21. (Original) A process according to claim 1 further comprising dispersing the polymer-coated pigment particle into a suspending fluid to form an electrophoretic medium.

Claims 22-29. (Cancelled).

30. (New) An electrophoretic medium comprising a plurality of pigment particles suspended in a suspending fluid, wherein the pigment particles have a polymer shell comprising repeating units derived from more than one monomer.

31. (New) An electrophoretic medium according to claim 30 in which the synthesis of the polymer shell has been carried out in more than one step.

32. (New) An electrophoretic medium according to claim 30 in which the more than one monomer includes one or more of lauryl methacrylate, t-butyl methacrylate and styrene.

33. (New) An electrophoretic medium according to claim 30 wherein the suspending fluid comprises at least one hydrocarbon.

34. (New) An electrophoretic display comprising an electrophoretic medium according to claim 30 and at least one electrode disposed adjacent the electrophoretic medium and arranged to apply an electric field thereto.